This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-26) (Canceled)

27) (Previously Presented) A method for analysis of a solid material, comprising:
(a) coring the solid material with a coring tool such that a plug is formed;
(b) extruding the plug of solid material;
(c) exposing the plug of solid material to radiation;
(d) detecting scattered radiation; and
(e) analyzing the scattered radiation to obtain information about the crystalline structure of said solid material using powder X-ray diffraction or Raman spectroscopy, wherein when the radiation is X-ray radiation, the angle of incidence of the X-ray radiation is less than 2.50 degrees.

28) (Previously presented) The method for analysis of a solid material of claim 27, further comprising compressing said solid material after said plug is formed.

29) (Previously presented) The method for analysis of a solid material of claim 27, further comprising loading said coring tool onto a rack after said solid material is extruded.

30) (Previously presented) The method for analysis of a solid material of claim 29, wherein said rack comprises a top plate with one or more holes.

31) (Previously presented) The method for analysis of a solid material of claim 30, wherein said top plate is composed of a material that absorbs x-ray radiation.

32) (Previously presented) The method for analysis of a solid material of claim 27, wherein a pin is used to extrude said plug of solid material.

33) (Previously presented) The method for analysis of a solid material of claim 32, wherein a micrometer is used to adjust the position of said pin.

34) (Previously presented) The method for analysis of a solid material of claim 29, wherein said rack further comprises a lifting plate.

35) (Previously presented) The method for analysis of a solid material of claim 27, wherein said radiation is x-ray radiation.

36) (Previously presented) The method for analysis of a solid material of claim 27, wherein said radiation is infrared radiation.

37) (Canceled).

38) (Previously Presented) A method for the analysis of a plurality of solid samples, comprising:

(a) coring each solid sample with a coring tool such that each solid sample forms a plug;
(b) extruding each plug of solid material;
(c) exposing each plug of solid material to radiation;
(d) detecting scattered radiation; and
(e) analyzing the scattered radiation to obtain information about the crystalline structure of each plug of solid material using powder X-ray diffraction or Raman spectroscopy, wherein when the radiation is X-ray radiation, the angle of incidence of the X-ray radiation is less than 2.50 degrees.

39) (Withdrawn) A system for analyzing a solid material, comprising:

(a) a coring tool comprising a means for extruding a plug of solid material;
(b) a means for exposing the plug of solid material to radiation; and
(c) a means for detecting scattered radiation.

40) (Withdrawn) The system for analyzing a solid material of claim 39, further comprising a means for compressing said solid material.

41) (Withdrawn) The system for analyzing a solid material of claim 39, further comprising a rack, wherein said rack comprises a top plate with one or more holes.

42) (Withdrawn) The system for analyzing a solid material of claim 41, wherein said top plate is composed of a material that absorbs x-ray radiation.

43) (Withdrawn) The system for analyzing a solid material of claim 39, wherein a plurality of solid materials is analyzed.

44) (Previously Presented) The method of claim 38 wherein the individual samples are arranged in a nominal X-Y grid, such that the minimum Y hole spacing s_y is described by the equation:

$$s_y = W_a / (n_{d*}n_y - 1)$$

wherein n_d represents the number of holes per diagonal in a column, n_y represents the number of holes per row, and W_a represents that array width, and the minimum distance between holes, s, is described by the equation:

$$s = (s_1x^2 + s_y^2)^{1/2}$$

wherein s_1x represents the spacing between the X-holes.

45) (Previously Presented) The method of claim 38 wherein steps (c) through (e) are automated.

46) (Previously Presented) The method of claim 38 wherein said radiation is x-ray radiation.

47) (Previously Presented) The method of claim 38 wherein said radiation is infrared radiation.